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UNITED STATES DEPARTMENT OF AGRICULTURE
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M O N T H L Y N E W S L E T T E R

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On September 9 Mr. McCrory accompanied by Chas. A. Bennett and R. C. Young conferred at Memphis, Tenn., with Mack Rust, one of the inventors of the Rust Brothers cotton picker. They then went to Stoneville, Miss. where a demonstration of the picker was made before a large number of visitors at the Mississippi Delta Branch Experiment Station. At the conclusion of the demonstration, cooperative arrangements were made between the Bureaus of Agricultural Engineering and Agricultural Economics and the Mississippi Delta Branch Experiment Station for more thorough tests which will include the ginning of mechanically harvested samples and the spinning of certain select lots of ginned fiber. From Stoneville Mr. McCrory went to St. Louis to confer with W. B. Taylor regarding the cooperative work with the Bureau of Biological Survey.

The ginning laboratory prepared an exhibit for display at the Mid-South Fair being held at Memphis during the week of September 14 to 19, and this was transported and set up at Memphis by C. H. Billett, of this Bureau, and E. V. Peery, of the Bureau of Agricultural Economics. The exhibit included a miniature model D drying installation and numerous photographic enlargements of cotton fiber samples and machinery set-ups.

Gin saw tests now under way are disclosing the very important fact that a decrease in the diameter of gin saws through filing and gumming in even so small an amount as 1/16 of an inch has increased the time of ginning by as much as 20 per cent.

The laboratory has recently received 91 and 98 saw special huller breasts for air-blast and brush gins. Tests have been made of new forms of cotton driers designed for application to the smaller gins of the Southeastern States.

The Central District reports the following accomplishments for the CCC drainage camps during the month of August: 5,654,759 sq. yds. clearing, 1,789,551 cu. yds. excavation and embankment work, and 45,828 linear feet of tile reconditioning, requiring a total of 76,003 man-days, and 14,317 man-days expended in surveys, seeding and sodding of levees, rebuilding outlet control structures, etc.

A research program, to be conducted in conjunction with the drainage camps, was begun during the past month. The program includes the establishment of ditch slope courses from which will be determined the value of "n" for open channels, the effect of the carrying capacity of the ditch due to varying conditions of vegetation and maintenance, as well as maintenance costs under these various conditions. It is intended to determine from the data gathered the most economical methods of maintenance. Two weeks were spent by J. G. Sutton in the field in Illinois, Missouri,

Ohio and Indiana in getting this new program started and conferring with inspectors. The research data to be secured by the Bureau's camp personnel, will be under the supervision of H. D. Fritz at Urbana, Ill., C. H. Torreyson at New Madrid, Mo., R. W. DeWeese at Delaware, Ohio, and John W. Kuhnel at Lafayette, Ind. These engineers are at the present time contacting the various camps in their areas relative to the establisment of the slope courses. It is intended to set up from three to six slope courses in about twenty camps in the near future.

A progress report on the cooperative work at the Everglades Experiment Station, Belle Glade, Fla., is in preparation by B. S. Clayton who is in the Washington office for that purpose. The report will cover ground water studies, pumping experiments, subsidence of peat soils, and evaporation and transpiration from drained areas.

F. E. Staebner has made an extended trip through States in the humid regions where supplemental irrigation is practiced, studying the advantages and practicability of irrigation as an insurance against drought.

In connection with the irrigation water-supply forecasting project, J. C. Marr made arrangements for establishing a snow-survey and water-supply program for Montana, northern Idaho, and Washington. Snow surveys in these three States will have value in connection with large water-control and water-storage works along Columbia, Missouri, and Mississippi Rivers, such as at Grand Coulee, Bonneville, and Fort Peck. Mr. Marr and L. T. Jessup established 18 snow survey courses in Washington and Oregon. George D. Clyde laid out 23 courses in central southern Utah, and Carl Rohwer made arrangements with the Weather Bureau and the Soil Conservation Service for establishment of snow courses on the principal streams of New Mexico. Tentative locations were selected for 10 courses on tributaries of the Rio Grande and the headwaters of Pecos and Canadian Rivers. R. A. Work also established four courses on the Umpqua River watershed, Ore.

On the Rio Grande Valley investigation for the National Resources Committee, the work of mapping the vegetative cover of San Luis Valley continued under the supervision of Carl Rohwer. To date 475,000 acres have been mapped, most of which is in the irrigated section. Over 1200 aerial photographs of the valley floor were made by a commercial aerial survey company, to be used in mapping the vegetative cover. In New Mexico, under the supervision of Fred C. Scobey, the mapping of the tributary streams entering Rio Grande from the east continued, the areas including several Indian pueblos. O. W. Israelsen prepared estimates of the net consumptive use of different crops in Mesilla Valley, also determinations of consumptive use for the entire valley by the inflow-outflow method. A study was also made of water-supply data, irrigation-area surveys, water-depletion studies, and estimates of net consumptive use in San Luis Valley as a basis for arriving at the consumptive use for the valley as a whole and for major tracts within the valley.

W. W. McLaughlin and M. R. Lewis attended the August conferences of the Great Plains Drought Area Committee at Rapid City, S. Dak. During the last week of the month Mr. McLaughlin was in Washington, D. C., and on

September 2 sailed from New York for Edinburgh, Scotland, to attend the International Snow-Survey Conference. Following that meeting, it is expected he will visit several European countries before returning to America.

Under the project "Silt in Streams and Reservoirs of Texas", a new silt sampling station, to be maintained in cooperation with the City of Houston, was established by Harry G. Nickle at Romayor, on the Trinity River.

Plans for the season's work on the project storage of water underground, which is being carried on by A. T. Mitchelson and Dean C. Muckel, include the installation of an additional water-spreading plot near Azusa, Calif. It has been found that percolation rates are influenced greatly by a fluctuating high water table which occurs during certain periods of the spreading season at the Canyon plots. The new plot will be located outside the limits of the canyon groundwater basin, in the main groundwater basin of the San Gabriel River Valley, where the water table stands at more than 200 feet below the ground surface at all times. Percolation rates on the new plot will be compared with rates on the canyon plots.

The soil moisture control program conducted by R. A. Work in connection with the pear orchard at the Medford, Ore., experiment tract, is practically completed for the season. The management of the three local irrigation districts has become interested in the project and has expressed a desire to contribute funds and actively participate in a greatly enlarged project for 1937, to embrace a large part of the cultivated orchard lands under the three ditch systems.

A. T. Mitchelson is in Washington, D. C., to attend the Upstream Engineering Conference called by the President to meet September 22 and 23. The conference will consider such subjects as prevention of erosion and storage of water both in surface and underground reservoirs. Mr. Mitchelson has prepared a paper for presentation at the conference entitled "Supplemental Irrigation".

R. B. Gray returned to Washington on September 17 after a two months trip in Europe. Before sailing from Southampton he saw Mr. McLaughlin who had just reached England.

W. R. Humphries left Washington on September 16 for Stoneville, Miss. to assist Chas. A. Bennett in making field tests of the Rust Brothers cotton picker. Before returning to Washington, Mr. Humphries will make field tests and observations of small combines in harvesting soybeans in the Mississippi Delta.

The present cotton crop beneath the screened cage at Presidio, Texas, is heavily infested with the pink bollworm D. A. Isler reports which should insure an ample natural winter carry-over of worms for conducting cultural control tests during the coming season. An addition to the screened cage was completed September 3.

Tests on the Urschel-Scott Viner sugar-beet harvester conducted in California during the past month by E. M. Mervine and S. W. McBirney have shown the machine to be considerably improved since last year. Beets were successfully harvested in three localities in the lower Sacramento Valley. A new type of lifting and elevating chains using rubber inserts in the chain links was very effective and caused no trouble. The new power-take-off shaft eliminated difficulties encountered last year.

The machine seemed to do a better job of getting the beets under favorable conditions as there were fewer misses in the row than heretofore. The topping, like that done last year, was comparable with hand work. Some improvements, particularly in dead-leaf separation from the beets, are still necessary.

On September 3, E. M. Mervine, cooperating with the Bureau of Plant Industry at Fort Collins, participated in a sugar beet "Field Day". Over three hundred farmers and factory representatives from Montana, Wyoming, Nebraska, and Colorado were in attendance, observing the most recent developments in plant breeding, crop methods, and sugar-beet machinery.

D. B. Eldredge, formerly with the Bureau on the corn borer project, reported for duty on September 1 as assistant farm mechanic on the fertilizer-machinery project. L. G. Schoenleber and Mr. Eldredge operated special drilling equipment at Norfolk, Va., the week of September 7 in connection with fertilizer-placement experiments with spinach.

W. H. Redit left Washington September 17 for a period of two weeks to take charge of Bureau exhibits at the exposition in Cleveland, Ohio.

Wallace Ashby visited the Georgia housing project early in September in company with J. R. Dodge. Mr. Dodge, J. W. Simons, and Frank Lanham of the University of Georgia made a short trip through portions of Georgia and Alabama to observe housing conditions. A considerable amount of new building and repairs of old structures was noted. A visit was made to the experimental house at Athens, Ga., where tests will soon be started.

The wheat storage project at Hays, Kans. has been closed and A. D. Edgar, who had charge of the work, has returned to his work on potato storages in Maine. Mr. Edgar will return to Washington later and will work in the Washington office most of the winter.

A fruit transit test just completed, from California to New York in which W. V. Hukill participated, was run mainly for the purpose of comparing the effectiveness of the new refrigerator cars having 3 inches of insulation with the older type of car with less insulation. There was between 10 and 20 per cent less heat loss through the wall in the new car, but very little difference in fruit temperatures. Ice meltage was, of course, greater in the older cars. Upper half bunker icing, which was tested in making this shipment, was further shown to be an economical method of refrigeration.

Attention is called to the paper "Selection of Materials for Rolled-Fill Earth Dams", by Charles H. Lee in the September 1936 issue of Proceedings of the American Society of Civil Engineers.

Publications issued:

Machine Placement of Fertilizers for Snap Beans in Florida. Circular 399.

Laying out Fields for Tractor Plowing. Farmers' Bulletin 1045, revised.